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# NASA Policy Directive

**COMPLIANCE IS MANDATORY**

**NPD 8081.1**

Effective Date: February 04,  
2010

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2015

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Request Notification of Change

(NASA Only)

## **Subject: NASA Chemical Rocket Propulsion Testing**

**Responsible Office: Space Operations Mission Directorate**

### **1. POLICY**

a. It is NASA's policy to strategically manage the rocket propulsion testing assets located at various NASA Centers as an Agency integrated capability portfolio in order to meet statutory requirements, efficiently and effectively meet current and future technical requirements, and reduce unnecessary duplication of capabilities. Therefore, the Rocket Propulsion Test (RPT) Program serves as the Agency's propulsion test advocate and principal implementing body, both internal and external, for NASA's rocket propulsion testing management, having programmatic management authority and technical management responsibilities for the Agency's propulsion test capabilities and infrastructure.

b. NASA's policy considers rocket propulsion testing capability a strategic Multi-Directorate and Multi-Program/Project resource. All programs, projects and acquisitions having rocket propulsion testing requirements, in collaboration with the RPT Program, shall include an evaluation of the use of NASA propulsion test facilities within their official trade studies.

c. It is NASA's policy, in order to meet overall Agency goals and commitments and assure compliance with this NPD and lower level documents, that all activities affecting rocket propulsion testing such as capital-asset improvements for test facility maintenance, modernizations, and refurbishments, integration for multisite test activities, identification and protection of core capabilities, test assignments, and the advancement and development of test technologies be processed through the RPT Board for review, validation, and approval. The RPT Program Manager will coordinate results from the RPT Board with the cognizant Center Director to create integrated funding, staffing, and facility modification plans.

d. It is NASA's policy to engage the Department of Defense (DoD) organizations with

similar capability to work together to shape the Government's rocket propulsion testing capability to efficiently meet national test needs through intra- and interagency cooperation and maintain this capability for the Nation. NASA has established the National Rocket Propulsion Test Alliance (NRPTA) with DoD, as delineated in the NRPTA Memorandum of Understanding (MOU), and will participate in this Alliance according to the NRPTA Operating Procedures.

## **2. APPLICABILITY**

- a. This NPD is applicable to NASA Headquarters and NASA Centers, including Component Facilities and Technical and Service Support Centers. This language applies to the Jet Propulsion Laboratory, other contractors, grant recipients or parties to agreements only to the extent specified or referenced in the appropriate contracts, grants or agreements, and any revisions or modifications of said agreements.
- b. This NPD describes a system in which Center Directors and the RPT Program cooperate to provide responsive, coherent, and affordable rocket propulsion test assets and services. This NPD applies to all NASA programs, projects, and chemical rocket test facilities utilized for certification, developmental or acceptance testing and for engines of 1000 pounds of thrust and greater and all test activities performed in those facilities, regardless of thrust level. In addition, by mutual consent of the applicable Center Director and the Associate Administrator for Space Operations, smaller facilities and similar activities such as structural or dynamics testing may also be included in the RPT Program.
- c. This NPD applies to hardware that includes chemical rocket engines that NASA is building or purchasing where NASA or support contractors are the primary designer, owner, and operator. It is expected that these vehicles will become NASA property and NASA will have primary responsibility and liability. It does not include hardware that is part of a service that NASA is procuring in which the Agency has minimal involvement in the design, development, and operations unless owners of this property request to use NASA RPT assets.

## **3. AUTHORITY**

- a. 42 U.S.C. Sec. 2473 (c) (I), National Aeronautics and Space Act of 1958, as amended.
- b. NPD 1000.0, Governance and Strategic Management Handbook.
- c. NPD 1000.3, The NASA Organization w/Change 3 (May 21, 2009).
- d. NPD 1000.5, Policy for NASA Acquisition.

## **4. APPLICABLE DOCUMENTS**

None.

## **5. RESPONSIBILITY**

- a. The Space Operations Mission Directorate shall:
  - (1) Manage the Agency RPT capability through the RPT Program Office as prescribed

by NPD 1000.0, NASA Governance and Strategic Management Handbook, and NPD 1000.3, The NASA Organization.

(2) Establish an appeals process for RPT Board decisions to the appropriate higher level Agency Board.

b. The RPT Program Office shall:

(1) Be the steward for NASA RPT capabilities and facilities and assure that all RPT assets and capabilities identified for sustainment either have validated mission requirements or have been identified as potentially required for future missions and, therefore, are sustained for risk mitigation purposes pending mission requirement maturation.

(2) Provide direct support to Agency programs and projects including integration/liaison to RPT facilities and equipment to assure the best fit with RPT capabilities and to identify future RPT requirements and resolve capability gaps. Make recommendations regarding the replacement, modification, or disposition of assets based on NASA and/or national needs.

(3) Utilize the RPT Board and processes to oversee, review, evaluate, and approve trade studies used to facilitate test assignments and capital investments for maintenance, modernizations, and refurbishments to the RPT Center or facility capable of accomplishing the customer's test requirements in the best interest of the Agency, or, as appropriate, provide NASA's internal customers approval to use non-NASA facilities.

(4) Utilize the RPT Board and process to make Rocket Propulsion Test Assignments and approve alternate uses of assets for which RPT has oversight.

(5) Provide short and long-range plans that are consistent with current Agency direction. This will include items such as an inventory/assessment of existing capabilities and conditions (facilities, equipment, and staff), mid to long-term requirements projections, resources, priorities and phasing for capital improvements for maintenance, modernizations, refurbishments, historical test perspective, and risk assessments.

(6) Utilize the NRPTA to conduct DoD facility trade studies, acquire costs estimates, and seek test assignments, as appropriate, to meet NASA customer rocket propulsion testing needs and statutory requirements.

(7) Build the relationship among NASA RPT Centers and with the NRPTA to develop the architecture and standards necessary to enable the Nation's RPT infrastructure to be interoperable and minimize facility duplication.

(8) Review and concur, through Agency Acquisition Strategy Meetings, on all Agency procurements and acquisitions having RPT requirements.

(9) Review, validate, and approve all capital investment resources utilized to maintain and improve RPT infrastructure including support infrastructure for which RPT is a primary customer.

c. NASA Directorates, Agency programs and/or projects, with a requirement for rocket propulsion testing shall:

(1) Coordinate acquisition and procurement strategies that have propulsion test requirements with the RPT Program Office for review and concurrence.

(2) Request test assignments and approval for investments in Agency RPT facilities from the RPT Program Office.

d. NASA Centers with chemical RPT facilities shall:

(1) Coordinate with and obtain approval from the RPT Program on investments, refurbishments, and modernizations to maintain or upgrade RPT facilities and supporting test infrastructure.

(2) Provide Center-approved cost estimates and proposals to the RPT Program for rocket propulsion test-related activities for evaluation and acceptance by the RPT Board.

(3) Coordinate Space Act Agreements (SAA) with the RPT Program Office, including changes, that utilize RPT rocket-testing facilities or supporting infrastructure to insure that a test assignment and approved cost and schedule estimates have been approved prior to final SAA signatures.

(4) Provide rocket propulsion testing facility and equipment utilization plans and projections for NASA Programs and reimbursable work.

(5) Maintain rocket propulsion testing facilities and infrastructure at readiness and capability levels mutually agreed upon and approved by the RPT Board.

(6) Conduct rocket propulsion testing and appraise the RPT Program on status according to RPT processes.

(7) Assign Center representative(s) to RPT Program-chartered boards and the NRPTA with decision authority to make commitments for the Center.

## **6. DELEGATION OF AUTHORITY**

None.

## **7. MEASUREMENTS**

a. Consistent with NPR 7120.5, NASA Space Flight Program and Project Management Requirements, RPT Program performance measures shall be defined in objective, quantifiable, and measurable terms and documented in the RPT Program Control Plan.

b. Compliance with this NPD will be evaluated on a continuing basis by the SOMD Assistant Associate Administrator for Launch Services, the Program Director or Program Executive, as appropriate, and the responsible Center Directors in coordination with the RPT Program Manager.

## **8. CANCELLATION**

None.

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**/s/ Charles F. Bolden, Jr.**

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## ATTACHMENT A: (TEXT)

### References

- A.1 42 U.S.C. S 2473 (c) (I), National Aeronautics and Space Act of 1958, as amended.
- A.2 NPR 1441.1, NASA Records Retention Schedules.
- A.3 NPD 7120.4, Program/Project Management.
- A.4 NPR 7120.5, NASA Space Flight Program and Project Management Requirements.
- A.5 NPR 8580.1, Implementing the National Environmental Policy Act and Executive Order 12114.
- A.6 NPR 8715.1, NASA Occupational Safety and Health Programs.
- A.7 NPR 8715.3C, NASA General Safety Program Requirements.
- A.8 NPD 8800.14, Policy for Real Property Management.
- A.9 NPD 8820.2, Design and Construction of Facilities.
- A.10 NPR 8820.2, Facility Project Requirements.
- A.11 NPD 8831.1, Maintenance and Operations of Institutional and Program Facilities and Related Equipment (Revalidated June 16, 2008).
- A.12 NPR 8831.2, Facilities Maintenance and Operations Management.
- A.13 NRPTA MOU, April 29, 2009.
- A.14 NRPTA Operating Procedures.
- A.15 Program Commitment Agreement, RPT Program.
- A.16 RPT Program Plan.
- A.17 RPTMB Operating Procedures.

### (URL for Graphic)

None.

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